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Appl. No. 09/832,530
Amdt. Dated July 28, 2004
Reply to Office action of April 29, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 Claim 1 (currently amended) An ink-drop generator for an inkjet printer in
2 which an inkjet is sprayed in drops, said generator particularly comprising:
3 - a generator body,
4 - at least one acoustic wave generator with a body elongated in an axial
5 direction to the inkjet, each generator having a vibrating surface perpendicular to the
6 axial direction of the jets, at least one section comprising the vibrating surface of each
7 acoustic generator being housed in a housing of the drop-generator body,
8 - at least one resonance cavity intended to contain ink, the acoustic-wave
9 generator housing and the cavity being connected by a hollow connector section
10 defined by a lateral connector surface, said lateral surface having, along the axial line of
11 the jets, a lower limit in the cavity and an upper limit close to the acoustic generator
12 housing, the upper limit of the transverse cross-section of said surface being circular
13 with a diameter equal to that of the acoustic-wave generator housing, the intersections
14 of this surface with the planes parallel to a nozzle plate, these planes being
15 located under the upper limit and above the lower limit, being closed curves the
16 perimeter of which diminishes when an intersection plane moves away from the upper
17 limit, a first section only of each cavity being constituted in a main section of said
18 generator body and, in this configuration, a second section in a continuation of said

19 generator body connected to be leaktight to the generator body, each cavity having an
20 ink feed, each cavity being defined particularly by ~~[[a]]~~ the nozzle plate and a wall, the
21 intersection of the wall and the nozzle plate defining a first plane contour line of the
22 wall, the nozzle plate comprising a plurality of nozzles aligned along an axial direction
23 of the nozzles perpendicular to the axial direction of the jets, the axial direction of the
24 jets and the axial direction of the nozzles defining a plane of the jets,
25 - a generator characterized in that the wall of each resonance cavity is
26 perpendicular to said nozzle plate, the first contour line being formed by two equal
27 segments that are parallel to one another and the axial direction of the nozzles, each
28 segment having two ends: a first and a second end, the two first ends of each segment
29 being connected by a first curved line and the two second ends of each segment being
30 connected by a second curved line.

1 Claim 2 (currently amended) ~~Generator~~ The generator of claim 1 characterized
2 in that each curved line is concave towards the inside of the cavity.

1 Claim 3 (currently amended) ~~Generator~~ The generator of claim 2 characterized
2 in that the first and second curved lines are constituted by semicircles the diameter of
3 which is the space between the two equal segments.

1 Claim 4 (currently amended) ~~Generator~~ The generator of claim 1 characterized
2 in that the largest measurement l of the first contour of the cavity lies along the axial

3 direction of the nozzles, the distance between the two segments being approximately
4 ~~[[1/4]]~~ 1/4 and the height of the wall being between ~~1/2 and 3 1/4~~ 1/2 and 3 1/4.

1 Claim 5 (currently amended) ~~Drop generator~~ The generator of claim 4
2 characterized in that the acoustic-wave generator has a circular, transverse cross-
3 section the diameter of which is between ~~1/2 and 3 1/4~~ 1/2 and 3 1/4.

1 Claim 6 (currently amended) ~~Generator~~ The generator of claim 5
2 characterized in that one part of the acoustic-wave generator housing has an opening
3 having a cross-section the length of which is more or less equal to ~~[[1/2]]~~ 1/2.

1 Claim 7 (Canceled)

1 Claim 8 (currently amended) ~~Generator~~ The generator of claim ~~[[7]]~~ 1
2 characterized in that for the sections of the connector surface located in the cavity the
3 intersections of the connector surface with the planes parallel to the nozzle plate
4 comprise two curves symmetrical to one another relative to the jet plane, the ends of
5 each of these curves being separated from each other by the distance between the
6 segments of the first contour.

1 Claim 9 (currently amended) ~~Generator~~ The generator of claim ~~[[7]]~~ 1
2 characterized in that the connector surface forms an opening between the acoustic-

3 wave generator housing and the cavity, said opening having a cross-section the length
4 of which is more or less equal to $\ell/2$.

5 Claim 10 (currently amended) ~~Generator~~ The generator of claim [[7]] 1
6 characterized in that at least part of the connector surface is formed by two sections of
7 conical surface that are symmetrical to each other relative to the jet plane.

1 Claim 11 (currently amended) ~~Generator~~ The generator of claim 1
2 characterized in that one of the ink-feed apertures is located at one end and the other
3 at a second end of a segment of the cavity, and an ink outlet opening in the body
4 housing is located at a top of the cavity.

1 Claim 12 (currently amended) ~~Generator~~ The generator of claim 1
2 characterized in that the nozzles of the cavity are equidistant and that the distance
3 between an end nozzle and of an end cavity of the body and a section of the external
4 wall of the body located at the intersection of said wall with the jet plane is shorter
5 than half the distance between two consecutive nozzles of the nozzle plate.

1 Claim 13 (currently amended) ~~Generator~~ The generator of claim 11
2 characterized in that the distance between two end nozzles and two consecutive
3 cavities of the same body is equal to the distance between two consecutive nozzles of
4 the same cavity.

1 Claim 14 (currently amended) ~~Generator~~ The generator of claim 13
2 characterized in that ~~[[it]]~~ the generator is equipped with positioning means aligned
3 parallel to the axial direction of the nozzles.

1 Claim 15 (currently amended) ~~Print~~ A print head characterized in that ~~[[it]]~~ the
2 print head comprises an ink generator of claim 12 and a multijet deflector assembly,
3 said assembly comprising charge and deflector electrodes to charge and deflect or not
4 deflect the drops from each jet.

1 Claim 16 (currently amended) ~~Inkjet~~ An inkjet printer characterized in that
2 ~~[[it]]~~ the printer is equipped with a plurality of ink-drop generators of claim 12, the
3 generators being aligned side-by-side such that the distance between an inkjet of an
4 end nozzle of a generator and the closest nozzle of a connected ink generator is equal
5 to the distance between consecutive jets of the same generator.

1 Claim 17 (currently amended) ~~Printer~~ The printer of claim 16 characterized in
2 that ~~[[it]]~~ the printer comprises a pressurized ink distributor that supplies the various
3 generators with ink via pipes and in that the lengths of said pipes are equal between a
4 distributor outlet and an ink inlet of each generator.

1 Claim 18 (currently amended) ~~Printer~~ The printer of claim 17 characterized in
2 that at least part of the pipes are rigid and that the pipes have equal numbers of elbows.

1 Claim 19 (currently amended) ~~Printer~~ The printer of claim 18 characterized in
2 that the value of each elbow angle of a pipe is identical on all the other pipes.

1 Claim 20 (currently amended) ~~Printer~~ The printer of claim 18 characterized in
2 that the elbows of the pipes form right angles.

1 Claim 21 (currently amended) ~~Printer~~ The printer of claim 16 characterized in
2 that ~~[[it]]~~ the printer comprises several lines of generators aligned side-by-side, the
3 lines being parallel to one another.